

What is claimed is:

1. A power supply for an implantable cardioverter-defibrillator for subcutaneous positioning between the third rib and the twelfth rib and using a lead system that does not directly contact a patient's heart or reside in the intrathorasic blood vessels and for providing anti-bradycardia pacing energy to the heart, the power supply comprising:

a capacitor subsystem for storing the anti-bradycardia pacing energy for delivery to the patient's heart; and

a battery subsystem electrically coupled to the capacitor subsystem for providing the anti-bradycardia pacing energy to the capacitor subsystem.

2. The power supply of claim 1, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately .1 volts to approximately 100 volts.

3. The power supply of claim 2, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately .1 volts to approximately 25 volts.

4. The power supply of claim 2, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 25 volts to approximately 50 volts.

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5. The power supply of claim 2, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 50 volts to approximately 75 volts.

6. The power supply of claim 2, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 75 volts to approximately 100 volts.

7. The power supply of claim 1, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 1 millisecond to approximately 40 milliseconds.

8. The power supply of claim 7, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 1 millisecond to approximately 10 milliseconds.

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9. The power supply of claim 7, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 10 milliseconds to approximately 20 milliseconds.

10. The power supply of claim 7, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 20 milliseconds to approximately 30 milliseconds.

11. The power supply of claim 7, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 30 milliseconds to approximately 40 milliseconds.

12. The power supply of claim 1, wherein the anti-bradycardia pacing energy comprises a monophasic waveform further comprising a voltage waveform that is either positive or negative in polarity.

13. The power supply of claim 12, wherein the monophasic waveform further comprises a tilt of approximately 5% to approximately 95%.

14. The power supply of claim 13, wherein the tilt is approximately 50%.

5 15. The power supply of claim 1, wherein the anti-bradycardia pacing energy comprises a monophasic waveform that is provided at a rate of approximately 20 to approximately 120 stimuli/minute.

10 16. The power supply of claim 15, wherein the monophasic waveform is provided after a patient's heart rate is equal or less than approximately 20 beats/minute.

15 17. A voltage output system for an implantable cardioverter-defibrillator for subcutaneous positioning between the third rib and the twelfth rib and using a lead system that does not directly contact a patient's heart or reside in the intrathorasic blood vessels and for providing anti-bradycardia pacing energy to the heart, the power
20 supply comprising:

 an energy storage system for storing the anti-bradycardia pacing energy for delivery to the patient's heart; and

an energy source system electrically coupled to the capacitor subsystem for providing the anti-bradycardia pacing energy to the capacitor subsystem.

5 18. The voltage output system of claim 17, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately .1 volts to approximately 100 volts.

10 19. The voltage output system of claim 18, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately .1 volts to approximately 25 volts.

15 20. The voltage output system of claim 18, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 25 volts to approximately 50 volts.

20 21. The voltage output system of claim 18, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 50 volts to approximately 75 volts.

22. The voltage output system of claim 18, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 75 volts to approximately 100 volts.

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23. The voltage output system of claim 17, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 1 millisecond to approximately 40 milliseconds.

24. The voltage output system of claim 23, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 1 millisecond to approximately 10 milliseconds.

25. The voltage output system of claim 23, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 10 milliseconds to approximately 20 milliseconds.

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26. The voltage output system of claim 23, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 20 milliseconds to approximately 30 milliseconds.

27. The voltage output system of claim 23, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 30 milliseconds to approximately 40 milliseconds.

28. The voltage output system of claim 17, wherein the anti-bradycardia pacing energy comprises a monophasic waveform that is either positive or negative in polarity.

29. The voltage output system of claim 28, wherein the positive voltage portion further comprises a tilt of approximately 5% to approximately 95%.

30. The voltage output system of claim 29, wherein the tilt is approximately 50%.

31. The voltage output system of claim 17, wherein the anti-bradycardia pacing energy comprises a monophasic waveform that is provided at a rate of approximately 20 to approximately 120 stimuli/minute.

32. The voltage output system of claim 31, wherein the monophasic waveform is provided after a patient's heart rate is equal or less than approximately 20 beats/minute.

5 33. An implantable cardioverter-defibrillator for subcutaneous positioning between the third rib and the twelfth rib within a patient, the implantable cardioverter-defibrillator comprising:

10 a housing having an electrically conductive surface on an outer surface of the housing;

15 a lead assembly electrically coupled to the housing and having an electrode, wherein the lead assembly does not directly contact the patient's heart or reside in the intrathorasic blood vessels;

20 a capacitor subsystem located within the housing and electrically coupled to the electrically conductive surface and the electrode for storing anti-bradycardia pacing energy and for delivering the anti-bradycardia pacing energy to the patient's heart through the electrically conductive surface and the electrode; and

a battery subsystem electrically coupled to the capacitor subsystem for providing the anti-bradycardia pacing energy to the capacitor subsystem.

34. The implantable cardioverter-defibrillator of claim 33, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately .1 volts to approximately 100 volts.

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35. The implantable cardioverter-defibrillator of claim 34, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately .1 volts to approximately 25 volts.

36. The implantable cardioverter-defibrillator of claim 34, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 25 volts to approximately 50 volts.

37. The implantable cardioverter-defibrillator of claim 34, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 50 volts to approximately 75 volts.

38. The implantable cardioverter-defibrillator of claim 34, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 75 volts to approximately 100 volts.

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39. The implantable cardioverter-defibrillator of claim 33, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 1 millisecond to approximately 40 milliseconds.

40. The implantable cardioverter-defibrillator of claim 39, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 1 millisecond to approximately 10 milliseconds.

41. The implantable cardioverter-defibrillator of claim 39, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 10 milliseconds to approximately 20 milliseconds.

42. The implantable cardioverter-defibrillator of claim 39, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 20 milliseconds to approximately 30 milliseconds.

43. The implantable cardioverter-defibrillator of
claim 39, wherein the anti-bradycardia pacing energy
comprises a monophasic waveform having a pulse width that
is approximately 30 milliseconds to approximately 40
milliseconds.

44. The implantable cardioverter-defibrillator of
claim 33, wherein the anti-bradycardia pacing energy
comprises a monophasic waveform that is either positive or
negative in polarity.

45. The implantable cardioverter-defibrillator of
claim 44, wherein the positive voltage portion further
comprises a tilt that is approximately 5% to approximately
95%.

46. The implantable cardioverter-defibrillator of
claim 45, wherein the tilt is approximately 50%.

47. The implantable cardioverter-defibrillator of
claim 33, wherein the anti-bradycardia pacing energy
comprises a monophasic waveform that is provided at a rate
of approximately 20 to approximately 120 stimuli/minute.

48. The implantable cardioverter-defibrillator of
claim 47, wherein the monophasic waveform is provided after
a patient's heart rate is equal or less than approximately
20 beats/minute.

49. A method for supplying power for an implantable
cardioverter-defibrillator for subcutaneous positioning
between the third rib and the twelfth rib and using a lead
system that does not directly contact a patient's heart or
reside in the intrathoracic blood vessels and for providing
anti-bradycardia pacing energy to the heart, the method
comprising:

generating anti-bradycardia pacing energy;
storing the anti-bradycardia pacing energy; and
delivering the anti-bradycardia pacing energy to the
patient's heart.

50. The method of claim 49, wherein the anti-
bradycardia pacing energy comprises a monophasic waveform
having a peak voltage that is approximately .1 volts to
approximately 100 volts.

51. The method of claim 50, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately .1 volts to approximately 25 volts.

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52. The method of claim 50, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 25 volts to approximately 50 volts.

53. The method of claim 50, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 50 volts to approximately 75 volts.

54. The method of claim 50, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a peak voltage that is approximately 75 volts to approximately 100 volts.

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55. The method of claim 49, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 1 millisecond to approximately 40 milliseconds.

56. The method of claim 55, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 2 milliseconds to approximately 10 milliseconds.

57. The method of claim 55, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 10 milliseconds to approximately 20 milliseconds.

58. The method of claim 55, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 20 milliseconds to approximately 30 milliseconds.

59. The method of claim 55, wherein the anti-bradycardia pacing energy comprises a monophasic waveform having a pulse width that is approximately 30 milliseconds to approximately 40 milliseconds.

60. The method of claim 49, wherein the anti-bradycardia pacing energy comprises a monophasic waveform that is either positive or negative in polarity.

61. The method of claim 60, wherein the positive voltage portion further comprises a tilt of approximately 5% to approximately 95%.

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62. The method of claim 61, wherein the tilt is approximately 50%.

63. The method of claim 49, wherein the anti-bradycardia pacing energy comprises a monophasic waveform that is provided at a rate of approximately 20 to approximately 120 stimuli/minute.

64. The method of claim 63, wherein the monophasic waveform is provided after a patient's heart rate is equal or less than approximately 20 beats/minute.

65. The method of claim 49, wherein the implantable cardioverter-defibrillator is positioned subcutaneously between the third and fifth ribs.

66. The method of claim 49, wherein the implantable cardioverter-defibrillator is positioned subcutaneously between the fourth and sixth ribs.

67. The method of claim 49, wherein the implantable cardioverter-defibrillator is positioned subcutaneously between the sixth and eighth ribs.

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68. The method of claim 49, wherein the implantable cardioverter-defibrillator is positioned subcutaneously between the eighth and tenth ribs.

69. The method of claim 49, wherein the implantable cardioverter-defibrillator is positioned subcutaneously between the tenth and twelfth ribs.

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